

Low Cost Interceptor

Low Cost Cruise Missile Defense Initiative

U.S. Army Space and Missile Defense Command
Office of Technical Integration and Interoperability

Current and future cruise missile threats are asymmetric and include low-cost/low-technology systems, as well as expensive and sophisticated systems. Future defenses against these threats must embrace Army Transformation goals of dominant maneuver, precision engagement, focused logistics, and full dimensional protection.

Current Theater Air and Missile Defense (TAMD) systems such as the Army Patriot PAC-3 are capable of defeating the entire spectrum of cruise missile and air-breathing threats. However, these legacy systems are very expensive and have a poor cost-per-kill exchange ratio against the low-cost threat. Potential adversaries can use low-cost/low-technology cruise missiles to saturate defenses and deplete limited interceptor inventory. Once degraded, more sophisticated systems can penetrate the weakened defense.

To counter this threat, the U.S. Army Space and Missile Defense Command (USASMDC), Office of Technical Integration and Interoperability (OTII) Low Cost Cruise Missile Defense (LCCMD) Initiative is conducting system engineering analysis in preparation for developing the preliminary system design for a Low Cost Interceptor (LCI). This initiative is evaluating existing and maturing technologies in propulsion, seekers, missile guidance, and lethality to prove the feasibility of developing a long-range interceptor that will cost less than \$100,000 in manufacturing. This will provide a cost-effective solution to the proliferation of low-cost cruise missile and other air-breathing threats.

An LCI proof-of-concept mockup and flight-test prototype missiles will be developed. The mockup will be used to develop cost effective solutions to hardware integration issues and provide a smooth transition to the fabrication of flight-test missiles. The flight-test software will be developed and evaluated in the hardware-in-the-loop testbed. This will assure completeness and compliance with flight and safety requirements. The initial LCI flight test program will consist of

four flights. These tests will characterize the interceptor and demonstrate the LCCMD concept. Several different types of surrogate threat targets will be intercepted and destroyed, demonstrating the effectiveness to the warfighter.

Once fielded, the LCI will be a near-term complement to rather than replacement for, very-capable legacy TAMD systems. Defenders can use LCI to engage the bulk of the threat, which is low-cost/low-technology, while saving their silver bullets for use against the more sophisticated threats. This complementary relationship will continue as legacy systems transition to the Future Combat Systems of the Objective Force.

The LCCMD/LCI Initiative is designed to play a critical role in current and future multi-layered TAMD and integrated cruise missile defense warfighting concepts of operations. This program will be executed to ensure consistency with Single Integrated Air Picture/Family of Interoperable Operating Pictures initiatives and to maintain full compatibility with the future combat systems for the Army's Transformation Objective Force. It will provide full dimensional protection of personnel and key assets, precision engagement at long range, and have a reduced logistics trail. Congress provided FY01 funding to start the LCCMD/LCI Program to deliver the desired warfighting capability.

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